

PATENT
Attorney Docket No. VM7010742001
Varian No. Varian 01-005US

REMARKS

Amendments to claims 20, 21, 27, 28, 39, and 46 are to rewrite these claims in independent form. No new matter has been added.

I. ALLOWED CLAIMS

Applicants wish to thank the Examiner for allowing claims 1-17 and 55-60.

II. CLAIM OBJECTIONS

Claims 20, 21, 27, 28, 38, 39, 44, 46, and 48 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 20, 21, 27, 28, 39, and 46 have been rewritten in independent form, and therefore, are believed allowable.

III. CLAIM REJECTIONS UNDER U.S.C. § 102

Claims 18, 19, 22-26, 29, 30, 31, 33-37, 42, and 43 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by EP 0205720A1 (Brahme). Applicants respectfully note that in order to sustain a rejection under § 102, each element in the rejected claim must be found, either expressly or inherently, in the cited reference.

Claim 18 recites illuminating an object with a beam at a MeV energy level, determining an image of the object formed by the beam, determining radiation absorption data using the image, and determining a radiation treatment plan based on the radiation absorption data. Claims 26, 31, and 42 recite similar limitations. Applicants respectfully submit that Brahme does not disclose or suggest the combination of the above limitations. According to the Office Action, the abstract allegedly discloses the above limitations. However, the abstract discloses:

A device for making photon CT images with the patient in radiation therapy position. A narrow pencil shaped beam of photons (5) the energy of which is of the order of about 3 up to about 50 MeV is scanned transversally over the patient. During scanning the photons transmitted through the patient's body are measured by the detector array (6). A computer (13) then reconstructs a CT-image of the body from the photon transmission data and the position data of the scanning beam (5). The CT image thus determined is used for planning the patient treatment in a

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separate dose planning computer (16). The patient is then treated by scanning the beam over the treatment volume and in so doing using the recorded position data to position the beam and the absorption (sic) data to vary the scan pattern of the beam such that the desired dose distribution in the tumor volume is obtained.

(Emphasis Added)

As such, the abstract discloses using a CT image for planning a patient treatment, and does not disclose or suggest obtaining radiation absorption data using the CT image that is generated using MeV beam. Notably, on page 7, lines 8-20, Brahme discloses using a "conventional CT scanner" to generate an image that contains absorption coefficient. However, according to page 7, lines 1-4, such conventional CT scanner is a "70-140 kv" CT-scanner. As such, the cited passages of Brahme do not disclose or suggest obtaining radiation absorption data from a CT image generated using MeV beam, nor do they disclose or suggest using such radiation absorption data for treatment planning. For at least the foregoing reasons, claims 18, 26, 31, and 42, and their respective dependent claims, are believed allowable over Brahme.

IV. CLAIM REJECTIONS UNDER U.S.C. § 103

Claims 45, 47, 49, and 54 stand rejected under 35 U.S.C. 103(a) as being unpatentable over "Radiographic and Tomographic Imaging System Integrated into a Medical Linear Accelerator for Localization of Bone and Soft-Tissue Targets" (Jaffray) in view of U.S. Patent No. 6,055,295 (Murthy).

Claim 45 recites a first beam source configured to generate a first radiation beam at a first intensity level and a second radiation beam at a second intensity level toward the platform. According to the Office Action, figure 1 of Jaffray allegedly discloses the above limitation. However, Applicants respectfully note that figure 1 of Jaffray shows a MV source for generating MV beam, and a kV x-ray tube for generating kV beam towards the kV imager. As such, Jaffray does not disclose a beam source that is capable of generating two radiation beams at two intensity levels. Murthy also does not disclose or suggest the above limitation, and therefore fails to make up the deficiency present in Jaffray. For at least the foregoing reasons, claim 45 and its dependent claims are believed allowable over Jaffray, Murthy, and their combination.

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CONCLUSION

Based on the foregoing, all remaining claims are believed in condition for allowance. If the Examiner has any questions or comments regarding this amendment, please contact the undersigned at the number listed below.

The Commissioner is authorized to charge any fees due in connection with the filing of this document to Bingham McCutchen's Deposit Account No. 50-2518, referencing billing number 7010742001. The Commissioner is authorized to credit any overpayment or to charge any underpayment to Bingham McCutchen's Deposit Account No. 50-2518, referencing billing number 7010742001.

DATE: August 7, 2006

Respectfully submitted,

By: 

Gerald Chan
Registration No. 51,541

Bingham McCutchen LLP
Three Embarcadero Center, Suite 1800
San Francisco, California 94111
Telephone: (650) 849-4960
Facsimile: (650) 849-4800